

## CLAIMS

1           1. A system for self-authenticating a first end-user connected to a common network  
2   and a second end-user connected to the common network, the first end-user being a customer  
3   of a first service provider of multiple service providers and the second end-user being a  
4   customer of a second service provider of multiple service providers, comprising:  
5           a digital repository populated with  
6                service provider entries including information about the first service provider  
7   and other information about the second service provider,  
8                end-user entries including information about the first end-user and other  
9   information about the second end-user, each of the end-user entries being associated with at  
10   least one service provider entry, and  
11               service description entries including information about a level of service  
12   purchased by an end-user from a service provider, each of the service description entries  
13   being associated with an end-user entry;  
14           a processor; and  
15           a computer readable medium encoded with processor readable instructions that when  
16   executed by the processor implement,  
17               a new device detection mechanism configured to detect a new device  
18   connected to the common network, the new device being associated with one of the first end-  
19   user and the second end-user,  
20               a bandwidth allocation mechanism configured to allocate limited bandwidth  
21   on the common network to the new device and to provide access to an end-user  
22   authentication mechanism,

the end-user authentication mechanism configured to obtain identification information from the one of the first end-user and the second end-user, a service determination mechanism configured to query the digital repository to determine the level of service purchased by the one of the first end-user and the second end-user from a respective one of the multiple service providers based on information obtained by the end-user authentication mechanism, a service allocation mechanism configured to provide the level of service purchased to the one of the first end-user and the second end-user authenticated by the end-user authentication mechanism.

2. The system of Claim 1, wherein the digital repository comprises a database.

3. The system of Claim 1, wherein the common network comprises a network dedicated to broadband data transport services.

4. The system of Claim 3, wherein the data transport services comprise at least one of Internet access, voice over IP, and video on demand.

5. The system of Claim 1, wherein the common network comprises an open access network.

6. The system of Claim 1, wherein at least a portion of the common network comprises an Internet protocol network.

1           7. The system of Claim 1, wherein at least a portion of the common network  
2 comprises a hybrid fiber optic coaxial network.

1           8. The system of Claim 1, wherein at least one of the multiple service providers  
2 comprises an Internet service provider.

1           9. The system of Claim 1, wherein at least a portion of the common network  
2 comprises a Data Over Cable Service Interface Specification network.

1           10. The system of Claim 1, wherein at least a portion of the common network  
2 comprises a European Data Over Cable Service Interface Specification network.

1           11. The system of Claim 1, wherein the bandwidth allocation mechanism is further  
2 configured to direct an end-user to the end-user authentication mechanism using a wildcard  
3 Domain Name System technique to resolve an end-user Domain Name System address  
4 resolution request to an IP address of the end-user authentication mechanism.

1           12. The system of Claim 1, wherein the bandwidth allocation mechanism is further  
2 configured to use a policy-based routing to direct an end-user to the end-user authentication  
3 mechanism.

1           13. The system of Claim 1, wherein the bandwidth allocation mechanism is further  
2 configured to use at least one of a Layer Two Tunneling Protocol and policy-based routing to  
3 direct an end-user to the end-user authentication mechanism.

14. The system of Claim 1 wherein the bandwidth allocation mechanism is further configured to set IP address filters at an end-user device to block addresses other than an IP address of the end-user authentication mechanism.

15. A method for self-authenticating a first end-user connected to a common network and a second end-user connected to the common network, the first end-user being a customer of a first service provider of multiple service providers and the second end-user being a customer of a second service provider of multiple service providers, comprising:

populating a digital repository with

service provider entries including information about the first service provider and other information about the second service provider,

end-user entries including information about the first end-user and other information about the second end-user, each of the end-user entries being associated with at least one service provider entry, and

service description entries including information about a level of service purchased by an end-user, each of the service description entries being associated with an end-user entry;

detecting a new device connected to the common network, the new device being associated with one of the first end-user and the second end-user;

allocating limited bandwidth on the common network to the new device to provide access to an end-user authentication mechanism;

authenticating the one of the first end-user and the second end-user via the end-user authentication mechanism;

20 querying the digital repository to determine the level of service purchased by the one  
21 of the first end-user and the second end-user from a respective one of the multiple service  
22 providers based on information obtained in the obtaining step; and  
23 providing the level of service purchased to the one of the first end-user and the second  
24 end-user authenticated in the authenticating step.

1 16. The method of Claim 15, wherein the common network comprises a network  
2 dedicated to broadband data transport services.

1 17. The method of Claim 16, wherein the data transport services comprise at least  
2 one of Internet access, voice over IP, and video on demand.

1 18. The method of Claim 15, wherein the common network comprises an open access  
2 network.

1 19. The method of Claim 15, wherein at least a portion of the common network  
2 comprises an Internet protocol network.

1 20. The method of Claim 15, wherein at least a portion of the common network  
2 comprises a hybrid fiber optic coaxial network.

1 21. The method of Claim 15, wherein at least one of the multiple service providers  
2 comprises an Internet service provider.

1           22. The method of Claim 15, wherein at least a portion of the common network  
2 comprises a Data Over Cable Service Interface Specification network.

1           23. The method of Claim 15, wherein at least a portion of the common network  
2 comprises a European Data Over Cable Service Interface Specification network.

1           24. A system for self-authenticating a first end-user connected to a common network  
2 and a second end-user connected to the common network, the first end-user being a customer  
3 of a first service provider of multiple service providers and the second end-user being a  
4 customer of a second service provider of multiple service providers, comprising:

5           means for populating a digital repository with

6           service provider entries including information about the first service provider  
7 and other information about the second service provider,

8           end-user entries including information about the first end-user and other  
9 information about the second end-user, each of the end-user entries being associated with at  
10 least one service provider entry, and

11           service description entries including information about a level of service  
12 purchased by an end-user, each of the service description entries being associated with an  
13 end-user entry;

14           means for detecting a new device connected to the common network, the new device  
15 being associated with one of the first end-user and the second end-user;

16           means for allocating limited bandwidth on the common network to the new device  
17 and providing access to an end-user authenticating means;

18           means for authenticating the one of the first end-user and the second end;

means for querying the digital repository to determine the level of service purchased by the one of the first end-user and the second end-user from a respective one of the multiple service providers based on information obtained by the means for authenticating; and means for providing the level of service purchased to the one of the first end-user and the second end-user authenticated by the means for authenticating.

25. A computer program product, comprising:

a computer storage medium; and

a computer program code mechanism embedded in the computer storage medium for causing a processor to self-authenticate a first end-user connected to a common network and a second end-user connected to the common network, the first end-user being a customer of a first service provider of multiple service providers and the second end-user being a customer of a second service provider of multiple service providers, the computer program code mechanism having,

a first computer code device configured to maintain service provider information, end-user information, and service description information in a database,

the service provider information including information about the first service provider and other information about the second service provider,

the end-user information including information about the first end-user and other information about the second end-user and including an association between each end-user and at least one service providers, and

the service description information including information about a level of service purchased by an end-user, and an association with an end-user;

18 a second computer code device configured to detect a new device connected to the  
19 common network, the new device being associated with one of the first end-user and the  
20 second end-user;

21 a third computer code device configured to allocate limited bandwidth on the common  
22 network to the new device and to provide access to a fourth computer code device;

23 the fourth computer code device configured to authenticate an end-user based on  
24 identification information obtained from the one of the first end-user and the second end-  
25 user;

26 a fifth computer code device configured to query the database to determine the level  
27 of service purchased by the one of the first end-user and the second end-user from a  
28 respective one of the multiple service providers based on information obtained by the fourth  
29 computer code device; and

30 a sixth computer code device configured to provide the level of service purchased to  
31 the one of the first end-user and the second end-user.

1 26. The computer program product of Claim 25, wherein the common network  
2 comprises a network dedicated to broadband data transport services.

1 27. The computer program product of Claim 26, wherein the data transport services  
2 comprise at least one of Internet access, voice over IP, and video on demand.

1 28. The computer program product of Claim 25, wherein the common network  
2 comprises an open access network.



1 29. The computer program product of Claim 25, wherein at least a portion of the  
2 common network comprises an Internet protocol network.

1 30. The computer program product of Claim 25, wherein at least a portion of the  
2 common network as a hybrid fiber optic coaxial network.

1 31. The computer program product of Claim 25, wherein at least one of the multiple  
2 service providers comprises an Internet service provider.

1 32. The computer program product of Claim 25, wherein at least a portion of the  
2 common network comprises a Data Over Cable Service Interface Specification network.

1 33. The computer program product of Claim 25, wherein at least a portion of the  
2 common network comprises a European Data Over Cable Service Interface Specification  
3 network.

1 34. The computer program product of Claim 25, wherein the third computer code  
2 device is further configured to direct an end-user to the end-user authentication mechanism  
3 using a wildcard Domain Name System technique to resolve an end-user Domain Name  
4 System address resolution request to an IP address of the fourth computer code device.

1 35. The computer program product of Claim 25, wherein the third computer code  
2 device is further configured to use policy-based routing to direct an end-user to the fourth  
3 computer code device.

1           36. The computer program product of Claim 25, wherein the third computer code  
2 device is further configured to use at least one of a Layer Two Tunneling Protocol and  
3 policy-based routing to direct an end-user to the fourth computer code device.

1           37. The computer program product of Claim 25 wherein the third computer code  
2 device is further configured to set IP address filters at an end-user device to block addresses  
3 other than an IP address of the fourth computer code device.

1           38. A method for self-authenticating a first end-user connected to a common network  
2 and a second end-user connected to the common network, the first end-user being a customer  
3 of a first service provider of multiple service providers and the second end-user being a  
4 customer of a second service provider of multiple service providers, comprising the steps of:  
5           detecting a new device connected to the common network;  
6           granting a limited bandwidth on the common network to the new device;  
7           authenticating one of the first end-user and the second end-user of the new device  
8 through an application accessible over the limited bandwidth;  
9           determining a level of service purchased from a respective one of the first service  
10 provider and the second service provider by the one of the first end-user and the second end-  
11 user identified in the authenticating step; and  
12           providing the level of service purchased on the common network to the one of the  
13 first end-user and the second end-user.